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the A. O. U. Check-List. The number of species thus formally treated is 204. This is the first work of the kind on the birds of any part of the Pacific coast-region, and should be of great aid to "those who," as the author says, "wish to have an introduction to our familiar birds in their native haunts," for whom the book is especially intended. The omission of an Index, however, in a book of this character, is a grave fault, and a rare one, fortunately, in the bookmaking of to-day. — J. A. A.

Russell on Birds of the Northwest Territory. — Mr. Frank Russell's 'Explorations in the Far North'¹ contains a list of birds collected by him during two years spent in the Northwest Territory. The chief points at which collections of birds were made are Grand Rapids, on Lake Winnipeg, at the mouth of the Saskatchewan River, Aug. 30, 1892, to Feb. 20, 1893; Crow Nest Pass, Alberta, April, 1893; Fort Chippewyan, at the western end of Lake Athabasca, May 15 to June 15, 1893; Fort Rae, on the northern arm of Great Slave Lake, July, 1893, to May, 1894, and Herschel Island, on the Arctic Coast, July and August, 1894. Mr. Russell's adventurous journey was undertaken for the purpose of securing collections in all departments of natural history, including especially ethnology as well as zoölogy, ornithological work thus receiving only a portion of his attention. The list of birds, however, numbers 122 species, and adds much interesting information on the birds of the extensive regions visited by the author. Instead, however, of combining all of his observations into a single list, it would have been more convenient for the reader, seeking definite information regarding particular localities, if he had divided the list so as to give a separate enumeration of the species found at each locality. It would have made a little repetition as regards a few species, but the geographical clearness thus gained would have much more than compensated for a little loss of space.

We note that the list records the capture of two specimens of the European Widgeon (*Anas penelope*), — one at Grand Rapids, Lake Winnipeg, Sept. 1, and one at Fort Rae, Aug. 22, which, taken in connection with the small number of Ducks reported as taken, seems quite remarkable. As we also note that the list records the capture of two specimens of *Spizella pallida* at Fort Rae, and a specimen each of *Spizella socialis arizonæ* and *Sayornis phæbe* at Fort Chippewyan, while *Contopus richardsoni* is not mentioned, it is difficult to give quite as full confidence to the Widgeon records as would be otherwise natural. Also it is at least unexpected that his 52 specimens of Redpolls, taken at various points from Lake Winnipeg to Herschel Island, should all be referable to *Acanthis linaria*, this being also the only species of *Acanthis* given in the list. Both species of *Sco-*

¹ Explorations | in | the Far North | By | Frank Russell | — | Being the Report of an Expedition under the | Auspices of the University of Iowa | during the years 1892, '93, and '94 | — | Published by the University | 1898. — 8 vo. pp. i-ix, + 1-290, map, and numerous half-tone plates. Birds, pp. 253-270.

lecophagus are given as "abundant" in May at Fort Chippewyan, and the White-crowned Sparrow, found at Fort Rae, is recorded as *Zonotrichia intermedia*. While some of these records are surprising, to say the least, and possibly, with some others not here mentioned, may require revision, great credit is due Mr. Russell for the successful accomplishment of a most difficult journey, often under circumstances requiring a high order of courage, determination, and intelligence, and the Iowa University is to be congratulated upon the very substantial returns, in the way of collections and information, that have resulted from the young explorer's efforts as its representative. — J. A. A.

Loomis on California Water Birds.—Part IV¹ of Mr. Loomis's notes on California Water Birds relates to observations made off the coast of Monterey, September 18 to November 14, 1896. For nearly two months almost daily trips were made upon the ocean from the Hopkins Seaside Laboratory at Pacific Grove, and a summary of each day's observations is given (pp. 278–303). Then follow his 'Conclusions,' and finally a formal list of the species observed. The 'Conclusions' relate to the subject of migration, and treat of 'Migration Southward after Breeding Season,' 'Guidance by Physical Phenomena,' 'Guidance by Old Birds,' and 'Cause of Migration.' Especial attention is called to the fact that certain species of Petrels and Shearwaters found in our northern waters in summer breed either in the southern hemisphere or in the tropics. Mr. Loomis, in view of his experiences with the water birds off the California coast, has reached the conclusion that they are guided in their movements by the shore line and its prominent landmarks, and that in their sea journeys they may be able to direct their course by the currents and winds, and possibly by "celestial phenomena." He also considers it "reasonable to conclude that the young in the journey from their birthplace to the winter home of the species are dependent upon the guidance of the old birds who know the way because they have traveled it." "The causes of migration" he considers to be (1) "physical or outward," and (2) "psychological or inward." "In fine, it is maintained that winter, past and present, with its failure of food is the outward cause of all migratory movement." The "psychological or inward" cause of migration resolves itself into 'Inheritance,' 'Education' and 'Habit.' "It is not unreasonable" he says, "to suppose that there exists in migratory birds an inherent desire for travel and an inherited talent for geography. The ease with which birds find their nests in chaparral or in a sea of tules manifests that they possess memory of direction and locality in a remarkable degree. In migratory

¹ California Water Birds. No. IV, Vicinity of Monterey in Autumn. By Leverett M. Loomis, Curator of the Department of Ornithology. Proc. California Acad. Sci., Third Series, Vol. II, No. 3, pp. 277–322, pl. xv (map). Issued Feb. 12, 1900.